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| 10/663,025 | 09/15/2003 | Jia-Fam Wong | B-4212DIV 621223-1 | 2539 |

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EXAMINER

GEBREMARIAM, SAMUEL A

ART UNIT PAPER NUMBER

2811

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,025

Applicant(s)

WONG, JIA-FAM

Examiner

Samuel A. Gebremariam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-20 and 26-38 is/are pending in the application.
- 4a) Of the above claim(s) 18-20, 26-28, 30, 34, 37 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29, 31-33, 35 and 36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 29, 31 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Kaneko et al., US patent No. 6,433,842.

Regarding claims 29, Kaneko teaches (fig. 1) a thin film transistor (TFT), comprising: a gate electrode (2,3) with an island shape formed on a substrate (1); an insulating layer (4) covering the gate electrode; a semiconductor layer (5) with an island shape formed on the insulating layer (4), and positioned directly above the gate electrode (fig. 1); a source doped silicon layer (6) and a drain doped silicon layer (6) formed on the semiconductor layer (5), a channel being defined between the source doped silicon layer and the drain doped silicon layer (region between the source and drain regions) to expose the semiconductor layer therein (refer to fig. 1); first and second sacrifice layers (8) with island shapes respectively formed on the source doped silicon layer (6) and drain doped silicon layer (6, refer to fig. 1) and formed over the semiconductor layer in their entirety (fig. 1), the first and the second sacrifice layers being spaced apart by the channel and further separated from the insulating layer (4) in their entirety; a source electrode (9) formed above the first sacrifice layer (8), and the

source dope silicon layer (5); and a drain electrode (9) formed above the second sacrifice layer (8) and the drain doped silicon layer (6).

Regarding claim 31, Kaneko teaches the entire claimed structure of claim 29 above including a passivation layer (10) covering the source electrode (9), the drain electrode (9), and the channel, and the TFT is used in an in-plane-switch (IPS) type LCD (col. 13, lines 57-61).

Regarding claim 32, Kaneko teaches the entire claimed structure of claim 29 above including a passivation layer (10) covering the TFT on the substrate (40), and having a hole (fig. 1) above the drain electrode (region where drain line 19 is formed); and a transparent conductive layer (11) formed above the drain electrode (9) and electrically connected to the drain electrode via the hole (refer to fig. 1, col. 9, lines 20-30).

3. Claims 33 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimada et al., US patent No. 5,726,461.

Regarding claim 33, Shimada teaches (fig. 7) a thin film transistor (TFT), comprising: a gate electrode (11) with an island shape (refer to fig. 7) formed on a substrate (10); an insulating layer (12) covering the gate electrode (11); a semiconductor layer (13) with an island shape formed on the insulating layer (12), and positioned above the gate electrode (11); first and second sacrifice layers (15) with island shapes formed over and in direct contact with the semiconductor layer (13) in their entirety, and a channel being defined between the first and second sacrifice layers

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(region between layer 15) so as to expose the semiconductor layer (13); a source doped silicon layer (25) and a drain doped silicon layer (25 on the right hand side) formed above the first sacrifice layer (15), second sacrifice layer (15 on the right hand side), and the semiconductor layer (13), the source doped silicon layer (25 on the left) and the drain doped silicon layer (25 on the right) being spaced apart by the channel (channel is formed between source/drain region); and a source electrode (16a) and a drain electrode (16b) respectively formed on the source doped silicon layer (25 on the left) and the drain doped silicon layer (25 on the right).

Regarding claim 35, Shimada teaches the entire claimed structure of claim 33 above including a passivation layer (17) covering the source electrode (16a), the drain electrode (16b), and the channel (region between source/drain).

The limitation of "the TFT is used in an in-plane-switch (IPS) type LCD" is not given patentable weight because a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). Furthermore the structure of Shimada can be used as in an in-plane-switch (IPS) type LCD.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimada in view of Park et al., US patent No., 6,107,640.

Regarding claim 36, Shimada teaches substantially the entire claimed structure of claim 33 above except explicitly stating that a passivation layer covering the TFT on the substrate, and having a hole above the drain electrode; and a transparent conductive layer formed above the drain electrode and electrically connected to the drain electrode via the hole.

Park teaches a passivation layer (47) covering the TFT on the substrate (31), and having a hole (49) above the drain electrode (45); and a transparent conductive layer (51) formed above the drain electrode (45) and electrically connected to the drain electrode (45) via the hole (refer to fig. 2D).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the hole above the drain electrode and a transparent conductive layer formed above the drain electrode and electrically connected to the drain electrode via the hole as taught by Park in the structure of Shimada in order to form a thin film transistor with improved prevention against the formation of native oxide (col. 1, lines 6-15).

Response to Arguments

6. Applicant's arguments with regards to claims 29 and 31-32 filed 9/18/06 have been fully considered but they are not persuasive. Applicant argues that Kaneko does not anticipate claim 29 because, the reference does not teach the claimed limitation of the first and second sacrifice layers are ... formed over the semiconductor layer in their entirety. The limitation of "over" as recited in claim 29 does not preclude the formation of intermediate layer formed between the semiconductor layer and the first and second sacrifice layer. Therefore as clearly shown in fig. 1 of Kaneko, the first and second sacrifice layers (8) are formed over the semiconductor layer (5) in their entirety.

With regards to applicant's arguments with respect to claims 33, 35 and 36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Gebremariam whose telephone number is (571)-272-1653. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SAG

November 20, 2006

Douglas W. Owens 11/24/06

DOUGLAS W. OWENS
PRIMARY EXAMINER